

## Rapid Assessment Reference Condition Model

The Rapid Assessment is a component of the LANDFIRE project. Reference condition models for the Rapid Assessment were created through a series of expert workshops and a peer-review process in 2004-2005. For more information, please visit [www.landfire.gov](http://www.landfire.gov). Please direct questions to [helpdesk@landfire.gov](mailto:helpdesk@landfire.gov).

### Potential Natural Vegetation Group (PNVG):

R3PGRswt

Shorgrass Prairie with Trees

### General Information

**Contributors** (additional contributors may be listed under "Model Evolution and Comments")

#### Modelers

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#### Vegetation Type

Grassland

#### Dominant Species\*

BOGR2  
BUDA  
SCHIZ4

#### General Model Sources

- Literature  
 Local Data  
 Expert Estimate

#### LANDFIRE Mapping Zones

14	24	28
15	25	
23	27	

#### Rapid Assessment Model Zones

- |  |   |
|--|---|
| <input type="checkbox"/> California      | <input type="checkbox"/> Pacific Northwest    |
| <input type="checkbox"/> Great Basin     | <input type="checkbox"/> South Central        |
| <input type="checkbox"/> Great Lakes     | <input type="checkbox"/> Southeast            |
| <input type="checkbox"/> Northeast       | <input type="checkbox"/> S. Appalachians      |
| <input type="checkbox"/> Northern Plains | <input checked="" type="checkbox"/> Southwest |
| <input type="checkbox"/> N-Cent. Rockies |   |

#### Geographic Range

Occurs in the southern Great Plains from southeastern Colorado and eastern New Mexico.

#### Biophysical Site Description

This type typically occurs on plains and draws, or on gently rolling uplands of the southern Great Plains. In New Mexico, Colorado, elevations range from 5,000-6,800 ft. Precipitation ranges from 12 to 16 inches, and occurs predominantly during the summer.

#### Vegetation Description

Vegetation is short grass dominated with mid grass inclusions. little bluestem, blue gramma, buffalo grass, needle-and-thread, and three-awns, with intermingled forbs, scattered patches of shrubs, and trees.

#### Disturbance Description

Fire regime dominated by frequent replacement fires associated with productive grass fuels and cycles of moisture and drought. Patchy fires (causing 25-75% top-kill) were less frequent and were modeled here as mixed severity, although there is some debate about how often this type of patchy fire might actually occur.

Drought can cause a transition from closed to open conditions (class B to class C). Return interval for fire could be extended by ungulate grazing, but is not modeled here. Concentrations of ungulates could increase the percent of the landscape dominated by shrubs and forbs compared with reference conditions. Episodic disturbance caused by insect infestation (grasshoppers, range caterpillars, mormon crickets) is also not modeled here.

#### Adjacency or Identification Concerns

Higher elevation sites of this type borders the juniper steppe type.

\*Dominant and Indicator Species are from the NRCS PLANTS database. To check a species code, please visit <http://plants.usda.gov>.

**Scale Description**

Sources of Scale Data  Literature  Local Data  Expert Estimate

**Issues/Problems**

**Model Evolution and Comments**

This model is based on the original FRCC model PGRA5, but adjusted to conform to Rapid Assessment modeling rules. Results changed slightly for some classes (class B was 20%, C was 70%, D was 4%, and E was 1%).

Peer review suggested that that all plains grassland types be combined (R3PGm, R3PGmst, R3PGRs, R3PGRsws, R3PGRswt), mixed fire eliminated, and replacement fire interval set at 20 years. Because the workshop participants identified these separate types, they were not lumped together and fire regimes were left as-is, although descriptions were expanded to clarify use of mixed severity fire.

**Succession Classes**  
*Succession classes are the equivalent of "Vegetation Fuel Classes" as defined in the Interagency FRCC Guidebook (www.frcc.gov).*

**Class A 5%**

**Indicator Species\* and Canopy Position**  
 Bogr2  
 Buda

**Structure Data (for upper layer lifeform)**

	Min	Max
Cover	0 %	5 %
Height	no data	no data
Tree Size Class	no data	

**Description**  
 Early1 PostRep  
 Dominated by resprouts and seedlings of grasses and post-fire associated forbs. Low to medium height with variable canopy cover. This type typically occurs where fires burn relatively hot in classes B and C.

**Upper Layer Lifeform**  
 Herbaceous  
 Shrub  
 Tree

**Fuel Model** no data

Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

**Class B 15%**

**Indicator Species\* and Canopy Position**  
 Bogr2  
 Buda  
 Gusa

**Structure Data (for upper layer lifeform)**

	Min	Max
Cover	30 %	65 %
Height	no data	no data
Tree Size Class	no data	

**Description**  
 Mid1 Closed  
 Greater than 35 percent herb cover. Generally associated with more productive soils, but can be caused by cumulative high moisture seasons increasing the cover and productivity of class C. Low to medium height.

**Upper Layer Lifeform**  
 Herbaceous  
 Shrub  
 Tree

**Fuel Model** no data

Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

\*Dominant and Indicator Species are from the NRCS PLANTS database. To check a species code, please visit <http://plants.usda.gov>.

**Class C 65%**

Mid1 Open

**Description**

Less than 35 percent herb cover. Generally associated with less productive cobbly and gravelly soils, but can also be caused by cumulative drought shifting class B to this class. Low to medium height.

**Indicator Species\* and Canopy Position**

Bogr2

Buda

Schiz4

**Upper Layer Lifeform**

- Herbaceous
- Shrub
- Tree

**Fuel Model** no data

**Structure Data (for upper layer lifeform)**

	Min	Max
Cover	10 %	30 %
Height	no data	no data
Tree Size Class	no data	

Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

**Class D 10%**

Late1 Closed

**Description**

Less than 35 percent tree cover. Savannah aspect of scattered trees and shrubs with grass. Typically located on gentle slopes or less productive soils where fire intensity allows scattered tree seedlings to survive.

**Indicator Species\* and Canopy Position**

Bogr2

Buda

**Upper Layer Lifeform**

- Herbaceous
- Shrub
- Tree

**Fuel Model** no data

**Structure Data (for upper layer lifeform)**

	Min	Max
Cover	0 %	35 %
Height	no data	no data
Tree Size Class	no data	

Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

**Class E 5%**

Late1 Closed

**Description**

Greater than 35 percent tree cover. Typically located on the ridges, more moist north aspects, or other areas where patches may be missed by fire.

**Indicator Species\* and Canopy Position**

Bogr2

Buda

**Upper Layer Lifeform**

- Herbaceous
- Shrub
- Tree

**Fuel Model** no data

**Structure Data (for upper layer lifeform)**

	Min	Max
Cover	35 %	70 %
Height	no data	no data
Tree Size Class	no data	

Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

**Disturbances**

**Non-Fire Disturbances Modeled**

- Insects/Disease
- Wind/Weather/Stress
- Native Grazing
- Competition
- Other:
- Other:

**Fire Regime Group: 2**

- I: 0-35 year frequency, low and mixed severity
- II: 0-35 year frequency, replacement severity
- III: 35-200 year frequency, low and mixed severity
- IV: 35-200 year frequency, replacement severity
- V: 200+ year frequency, replacement severity

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**Historical Fire Size (acres)**

Avg:  
Min:  
Max:

**Fire Intervals (FI):**

Fire interval is expressed in years for each fire severity class and for all types of fire combined (All Fires). Average FI is the central tendency modeled. Minimum and maximum show the relative range of fire intervals, if known. Probability is the inverse of fire interval in years and is used in reference condition modeling. Percent of all fires is the percent of all fires in that severity class. All values are estimates and not precise.

**Sources of Fire Regime Data**

- Literature
- Local Data
- Expert Estimate

	<i>Avg FI</i>	<i>Min FI</i>	<i>Max FI</i>	<i>Probability</i>	<i>Percent of All Fires</i>
<i>Replacement</i>	15	2	35	0.06667	80
<i>Mixed</i>	60			0.01667	20
<i>Surface</i>					
<i>All Fires</i>	12			0.08334	

**References**

Dick-Peddie, W.A. 1993. New Mexico vegetation, past, present and future. Albuquerque, NM: Univ. New Mexico Press. Xxxii, 244 p.

Ford, P. L. 1999. Response of buffalograss (*Buchloe dactyloides*) and blue grama (*Bouteloua gracilis*) to fire. Great Plains Research 9:261-276.

Miller, Greg et al. (1993) Terrestrial Ecosystem Survey of the Santa Fe National Forest USDA Forest Service Southwestern Region.